

Work Order ID 54885

January 5, 2010 8:05:17 AM

Item ID: D119-646-243

Revision ID:

Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010 Start Qty: 1.00

Accept



Setup

Stop



Required Date: 18/01/2010 Req'd Qty: 1.00

Reference:

Approvals: Process Plan:

Date: 10-1-05

Tooling:

Date:

Run

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D3905

B

IIN-D119-646

B

100

0.00



DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D119-646-243
CHG 001

N/A

110

0.00

Skidtubes

Memo

0.00

Skidtubes

1- Inspect Mat'l D2500-1-190 for damage

>>>

2- Ensure squareness of ends

10-1-6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Work Order ID 54885

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Required Date: 18/01/2010 Req'd Qty: 1.00



Customer:

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Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

120



HandFinish

Operation
Description

Chemical Conversion Coat per QSI005 4.1

Set Up/
Run Hours

0.00

Draw
Number

DP

Draw
Rev.

10

Plan
Code

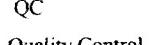
-1-

Accept
Qty

6

Reject
QtyReject
NumberInsp.
Stamp

130



QC

QC3- Inspect Part Finish

0.00

Memo

0.00

DP 10-1-6

150



Skidtubes

Memo

0.00

- 1- Install drill jig DT9480 drill all x-bolt spacer holes using 3/16 drill
 2- Scribe batch # inside aft end of tube

> DP 10-1-6

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

10/01/06

Operation
Description

QC5- Inspect part completeness to step on W/O

Set Up/
Run Hours

0.00

Draw
Number

Rev.

Plan
Code

Qty

Accept
QtyReject
QtyReject
NumberInspec.
Stamp $b = 5.25"$ $\Rightarrow S 10/01/07$

(X1) ✓

160 170

10/01/06

Memo

0.00

QC

Quality Control

170 160

10/01/06

Memo

0.00

CNC Bend 1

CNC Delta 100 Bender

1- Bend AFT end of tube using CNC Bender 1 and bend prog. D3905 AFT as per dwg D3905. Must use bending Aid DT9538, located 23.25" from Aft end.

2- Ensure bending Aid DT9538 is positioned correctly, that the bender set up is on full wide and that the indexing ridge is covered with graphite grease.



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Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180



Skidtubes

Memo

0.00

10-01-09

Skidtubes

1- Verify dimention of bend as per dwg D3905

2- Buff out marks left from bending.

3- Drill Aft Float bag holes using DT9493 as per dwg D3905 detail G and section F-F, open to finished size

4- Drill Aft ~~wearplate~~ and wearpad holes using DT ~~1146~~ and DT ~~9545~~ as per dwg D3905 detail ~~H~~ open to finished size5- Open x-bolt spacer holes to finished size as per dwg (sections D-D and E-E)
DO NOT OPEN FWD SADDLE HOLES

6- Deburr, blow out chips from inside of tube

7-Bond web in place as per Dwg D3905 & QSI 015.

A/R Sikaflex-291

Sikaflex expire date: 10-12-30

Start: 10-1-14 Time: 3:30

Finish: Time:

******(Adhere for 12hours)*****

DP 10-1-12

ANM 10-1-14

W/O:		WORK ORDER CHANGES					
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Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

RE 10/01/18

RE 10/01/18

200



CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1- Bend Fwd end of tube using bender 1 and bend prog. D3905 Fwd. Use
bending aid DT9544 ensure proper positioning2- Cut Fwd end of tube as per dwg.
VERIFY MEASURMENT BEFORE CUTTING

10-1-18

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop


**Sequence ID/
Work Center ID**
**Operation
Description**
Set Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210



Skidtubes

Memo

0.00

Skidtubes

1- Buff out marks left from bending

2- Drill Fwd cap holes using DT8215. Open Fwd and Aft cap holes to 0.208"

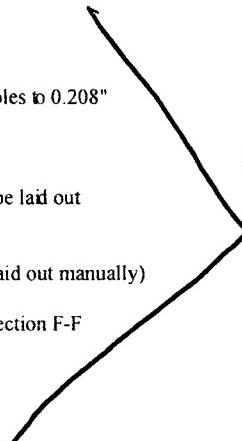
3- Open Fwd saddle holes to finished size as per dwg

4- Drill Fwd x-bolt hole and open to finished size. (Holes must be laid out manually)

5- Drill towring hole and open to finished size. (Holes must be laid out manually)

6- Open Aft float holes 0.391" as per dwg D3905 detail G and section F-F

7- Deburr, blow out chips from inside of tube.



10-1-B

220



QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

→ Sublka

(4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

224



Skidtubes

Memo

0.00

BE 10/01/20
BE 10/01/20
BE 10/01/20

Skidtubes

- 1- Countersink x-bolt holes as per dwg
- 2- Remove alodine prepare for welding
- 3- Insert x-bolt spacers

4- Weld x-bolt spacer as per dwg
A/R Alum rod Batch: M112860

5- Grind welds flush as per dwg

6- Counter bore x-bolt holes as per dwg

7- Deburr

BE 10/01/20

A W M 10-1-2)

225



QC5- Inspect part completeness to step on W/O

0.00

→ S 10.0.1.2

QC

Memo

0.00

Quality Control

(40)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

226



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

Memo

Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
0.00	<i>→ S10lock 21</i>						
0.00	<i>(X) ✓</i>						

227



HandFinish

Hand Finishing

Pressure Wash per QSI005 4.3

Memo

0.00

Bk. 10-01-26

① ✓

240



Powdercoat

Powder Coating

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

*M113170 START: 2:15pm 0.00
TCM 10:3209
FIN: 2:45pm*

=> 10-01-26

(X) ✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Stop



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Cust Item ID:

Required Date: 10/01/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

245

QC3- Inspect Part Finish

0.00

PL 10-02-3 ①

QC

Memo

0.00

Quality Control

250



HandFinish

Memo

0.00

Hand Finishing

I-Install inserts as per Dwg D3905.

PL 10-02-3 ②

PL →

260

QC5- Inspect part completeness to step on W/O

0.00

S. 10-02-3

③

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D119-646-243 PAR #: Fault Category: Skid tubes NCR: Yes No DQA: Date: 10/02/17
 Resolution: re work Disposition: re work QA: N/C Closed: Date: 10/02/18

WORK ORDER NON-CONFORMANCE (NCR)								
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/02/11	# 250	During installation of inserts it was found that 1 hole for inserts on APT end ▷ to close the to the Ridge.	G 10.02.11 per QSI 042	→ Build out some of the Ridge Bit wear. → Re touch up again	S 10.02.11 21/02/11	S 10.02.11 21/02/11	G 10.02.11 per QSI 042	S 10/02/11
		R.C. process.	G 10.02.11	→ Apply Zircon to even up the removed of P/L	H 10.02.11 10.02.12	S 10.02.11 10.02.12	G 10.02.11	S 10/02/11

NOTE: Date & initial all entries

Work Order ID 54885

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Cust Item ID:

Required Date: 18/01/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date: Tooling:

Date:

Run Start



QC:

Date: SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

270



HandFinish

Memo 0.00

Hand Finishing

1-Install wearpads, gaskets and wearplates as per Dwg D3905. Put sikaflex in

insert before installing bolts and washers

A/R Sikaflex-240/-291

Sikaflex expire date:

MU2345
10/08.

2- install plugs assembly as per dwg.

3 -Inspect for foreign objects as per QSI 024

4 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R Sikaflex-240/-291

Sikaflex expire date:

MU2345
10/08.

[] BK 10-02-4. ①.

280



QC

Quality Control

QC5- Inspect part completeness to step on W/O 0.00

Memo 0.00

w/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Item ID: D119-646-243

Accept



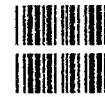
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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

285



Wing Walk as per dwg QSI005 4.4 Batch

112900

0.00

BR 10-02-46

①

HandFinish

Memo

0.00

Hand Finishing

286



QCB - Inspect Part Finish

0.00

QL3 - S1010105

⑦⑦

QC

QL5 + QCB
S Memo

0.00

QL5 - S1010205

⑧⑧

Quality Control

290



Identify as per dwg & Stock Location:

0.00

Packaging

Memo

P0054884 0.00

Packaging

W/O:		WORK ORDER CHANGES					
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Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

300

Operation
Description

QC21- Final Inspection - Work Order Release

Set Up/
Run Hours

0.00

Draw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInspec.
Stamp

QC

Quality Control

Memo

0.00

10/02/16 *MF*
10-2-16

W/O:		WORK ORDER CHANGES					
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

January 5, 2010 8:05:22 AM

Page 1

Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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D2500-1-190



Manufactured

No

110

Each

96.0000

1.0000



Ext'n - T Beam Tube 4"

Warehouse

Location

Main Warehouse

LG

52319

Main Warehouse

ST

46468

Loc Qty

Loc Code

93
93

10-1-6

D3885-3



Manufactured

No

170

Each

14.0000

1.0000



Standard Web

Warehouse

Location

Main Warehouse

LG

47740

Main Warehouse

ST

51844

52425

Loc Qty

Loc Code

1

1

1

13

1

1

1

12

1

1 p/1/14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr *	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

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Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issue	Status
D3903-1		Manufactured	No			190	Each	64.0000	12.0000			

Spacer

WarehouseLocation

Main Warehouse

LG 54

51849 54

12 BE 10/01/20

Main Warehouse

ST 10

47476 10

D3681-1

Manufactured No

190 Each 70.0000 8.0000



Spacer

WarehouseLocation

Main Warehouse

LG 68

51920 20

52898 48

8 BE 10/01/20

Main Warehouse

ST 2

47123 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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January 5, 2010 8:05:22 AM

Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3683-3		Purchased	No			250	Each	623.0000	12.0000			

Insert

Warehouse

Location

Main Warehouse

ST

47805

Loc Qty

Loc Code

623

623

12. BL 10-02-H.

ALS4-1032-130



Purchased

No

250

Each

2,717.000 10.0000



Insert

Warehouse

Location

Main Warehouse

ST

110511

Loc Qty

Loc Code

2717

2717

10 BL 10-02-H

D2855-3



Manufactured

No

270

Each

15.0000 2.0000



Cap

Warehouse

Location

Main Warehouse

fp5

52281

Loc Qty

Loc Code

15

15

2 BL 10-02-H.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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January 5, 2010 8:05:22 AM

Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3672-1		Manufactured	No			270	Each	1,744.000	4.0000			

Phenolic Washer

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST	1244	
39275	19	
42329	5	
47628 ✓	220	
52505	1000	

4 BK 10-02-4

Main Warehouse

ST117	500	
51674	500	

D3846-1



Manufactured No

270 Each 51.0000 1.0000



GASKET

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST	19	
47806 ✓	11	
51827 ✓	8	

1 BK 10-02-N

Main Warehouse

ST2368	32	
53735	32	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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January 5, 2010 8:05:22 AM

Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Bin Issued	Status
D3846-11 		Manufactured	No			270	Each	29.0000	1.0000 			

GASKET

Warehouse

Location

Main Warehouse

FP

51833 ✓

Loc Qty

Loc Code

18

18

1 BK 10-02-4.

Main Warehouse

ST

47807

Loc Qty

Loc Code

11

11

1 BK 10-02-4.

D3847-1

Manufactured No

270

Each

37.0000 1.0000

WEARPAD

Warehouse

Location

Main Warehouse

ST

47808

51823 ✓

Loc Qty

Loc Code

37

4

33

1 BK 10-02-4.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng /, Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Per Loc	Status
D3847-11		Manufactured	No			270	Each	19.0000	1.0000			

WEARPAD

Warehouse

Location

Main Warehouse

FP

51824 ✓

17

17

I BL 10-02-4.

Main Warehouse

ST

47809

2

2

D3849-047

Manufactured No

270

Each

2.0000

1.0000

WEARPLATE

Warehouse

Location

Main Warehouse

ST

51837 ✓

2

2

I BL 10-02-4.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3849-045		Manufactured	No			270	Each	3.0000	1.0000			

AFT WEARPLATE ASSY, FLOATGEAR

Warehouse	Loc Qty	Loc Code		
			Location	
Main Warehouse				
ST	3			
47811	1			
51836 ✓	2			
D3904-1	270	16.0000	Each	301.0000

Washer

Warehouse	Loc Qty	Loc Code		
			Location	
Main Warehouse				
ST	1			
48374	1			
Main Warehouse				
ST136	300			
51875 ✓	300			

January 5, 2010 8:05:22 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Pfod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 8

January 5, 2010 8:05:22 AM

Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3672-3		Manufactured	No			270	Each	252.0000	12.0000			

Phenolic Washer

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST

8

34471

8

Main Warehouse

ST117

244

51596✓

244

12 BL 10-02-4

AN3C5A



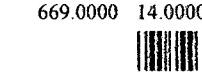
Purchased

No

270

Each

669.0000



14.0000

Bolt

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST 13088 13044 669

111424

8

111707

69

112314

1

113121

291

113149

300

14. BL 10-02-4.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Due Issued	Status
-----------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	---------------	--------

AN3C46A

Purchased

No

270

Each

104.0000

4.0000

BOLT

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST HS	104	
106169	5	
106176	9	
113164	40	
113302 ✓	50	

4 Bl 10-02-4

AN960C10L

Purchased

No

270

Each

416.0000

10.0000

washer

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

OFFSHORE	113288	
FG	100	

10. Bl 10-02-4.

NAS1149C0332R

Main Warehouse		
ST	316	
112116	156	
112612	160	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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January 5, 2010 8:05:22 AM

Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960C416 washer		Purchased		No		270	Each	542.0000	12.0000			

WarehouseLocation

Main Warehouse

ST

542

100993 ✓

542

12 BK 10-02-4

MS21043-3

Purchased

No

270

Each

4,542.000 8.0000

Nut

WarehouseLocation

OFFSHORE

FG

80

103691

80

Main Warehouse

ST

4462

111819

70

112243

29

112314 ✓

4363

8 BK 10-02-4.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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January 5, 2010 8:05:22 AM

Work Order ID: 54885



Parent Item: D119-646-243



Parent Item Name: Replacement Float Skidtube w/ Training Wearplates

Start Date: 05/01/2010

Required Date: 18/01/2010

Comments: IPP RevB: revise seq process 09.11.10 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS27039C4-08 		Purchased	No			270	Each	93.0000	12.0000			

SCREW

Warehouse

Location

Main Warehouse

ST

17831✓

Loc Qty

Loc Code

93

93

AN3C50A



Purchased

No

270

Each

70.0000

4.0000



12. BR 10-02-4

Bolt

Warehouse

Location

Main Warehouse

ST

112046✓

112451✓

112761✓

Loc Qty

Loc Code

70

5

15

50

D3411-3



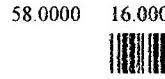
Manufactured

No

270

Each

58.0000



4. BR 10-02-4

WASHER

Warehouse

Location

Main Warehouse

ST

51635✓

52597✓

Loc Qty

Loc Code

58

18

40

16. BR 10-02-4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

5

4

3

2

1

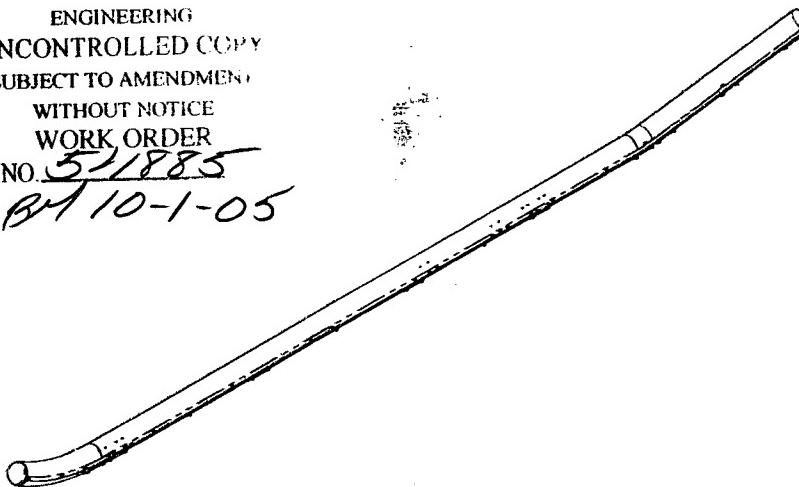
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

NO. 521885

BT 10-1-05



D3905-041 FLOAT SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3905-043 FLOAT SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-3 FLOAT WEB
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3905-041 = 40.7 lbs
D3905-043 = 47.0 lbs
D3905-045 = 47.3 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) INSERT D3885-3 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-2411-291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8932 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS. INSTALL AELS-1032-130 INTO D3905-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-2411-291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3905-041	FLOAT SKIDTUBE ASSY WITH WEARPAD
2		X		D3905-043	FLOAT SKIDTUBE ASSY WITH WEARPLATE
3			X	D3905-045	FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE
11	2	2	2	D2855-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	4	4	4	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
15	8	1	1	D3646-1	GASKET
16	1	1	1	D3846-11	GASKET
17	8	8	1	D3847-1	WEARPAD
18	1	1	1	D3847-11	WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEARPLATE ASSY
21		1		D3847-049	AFT WEARPLATE ASSY
22		1		D3849-047	FWD WEARPLATE ASSY
23		1		D3849-045	AFT WEARPLATE ASSY
24	1	1		D3885-3	FLOAT WEB
25	1	1		D3905-11	FLOAT SKIDTUBE
26			1	D3905-13	FLOAT SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
29	12	12	12	D3672-3	WASHER
30	12	12	12	D3683-3	INSERT
31			16	D3411-3	WASHER
41	42	42	10	ALS4-1032-130	INSERT
42	46	46	14	AN3C5A	BOLT
43			4	AN3C46A	BOLT
44			4	AN3C50A	BOLT
45	46	46	10	NAS1149C0332R	WASHER (OR AN960C10L)
46	12	12	12	NAS1149C0463R	WASHER (OR AN960C41G)
47			8	MS21043-3	NUT
48	12	12	12	MS27039C4-08	SCREW

RELEASED
09/01/05 MWS

B	REVISED PART LIST. ALS4-1032-130 WAS AELS-1032-130 (Z1: A6-3, A5-6, C5-7, A5-7), ADD D16832 (Z1: A6-1); AN3C5A WAS AN3C46A (Z1: C2, A5, C5, C4-1, C4-2, C4-3, C4-4); AN3C50A WAS AN3C52A (Z1: C2, A5, C5, C4-1, C4-2, C4-3, C4-4); D3849-047 WAS D3843-041 (Z1: B3-4), ADD D3411-3 (Z1: B3-6, C2-7, A8-7 & C7-4). D33113 WAS D01328 (Z1: B2-6, C2-7, A8-7 & C7-4). REVISED NOTE w/ (Z1: A6-7).	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	RF	DRAWING NO. D3905 REV. B	
CHECKED	RE	MFG. APPR.	
MFG. APPR.	RE	APPROVED	
APPROVED	RE	DE APPR.	
DE APPR.	RE	TITLE: A113 FLOAT SKIDTUBE ASSY NTS	
DATE: 09.06.30		SCALE	

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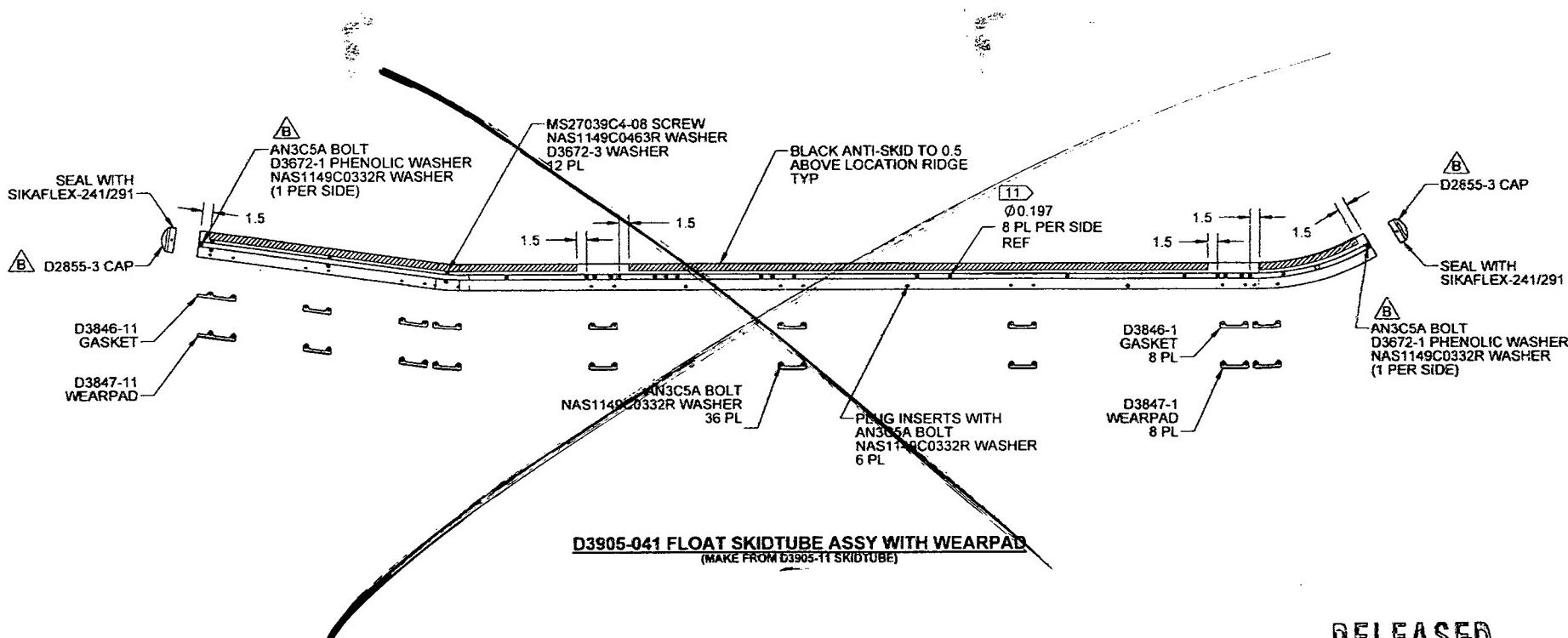
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



RELEASED
07/07/2010

W/L 54885

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	RE	DRAWING NO. REV. B	
MFG. APPR.	FD	D3905	SHEET 2 OF 8
APPROVED	MD	TITLE	SCALE
DE APPR.	MM	A119 FLOAT SKIDTUBE ASSY	NTS
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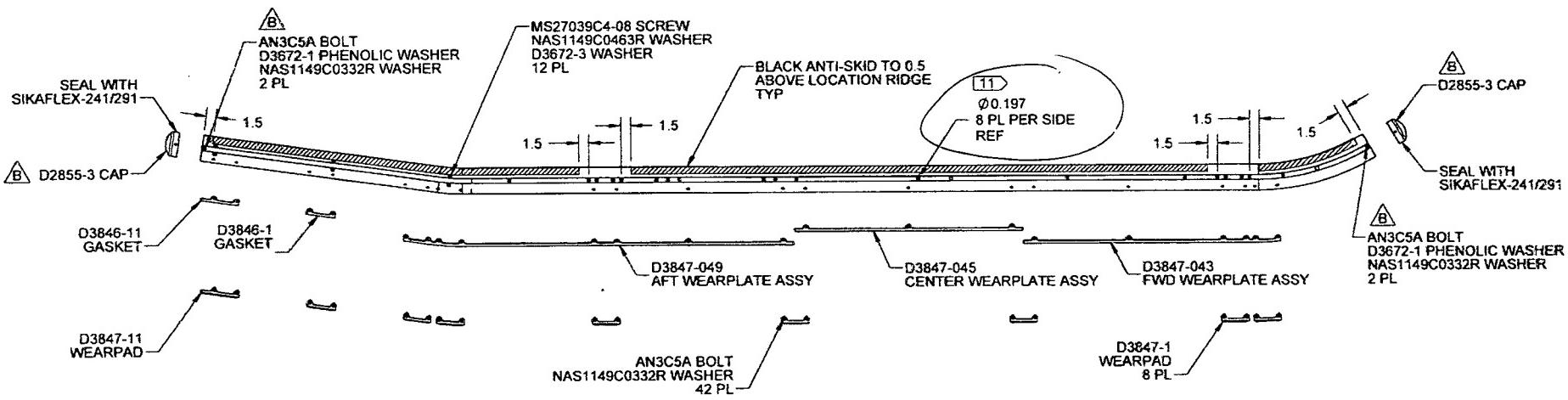
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D3905-043 FLOAT SKIDTUBE ASSY WITH WEARPLATE
(MAKE FROM D3905-11 SKIDTUBE)

RELEASED
10/07/1997

u/o 54885

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DE APPR.	H	SHEET 3 OF 8	
DATE	09.06.30	TITLE	SCALE
		A119 FLOAT SKIDTUBE ASSY	INTS

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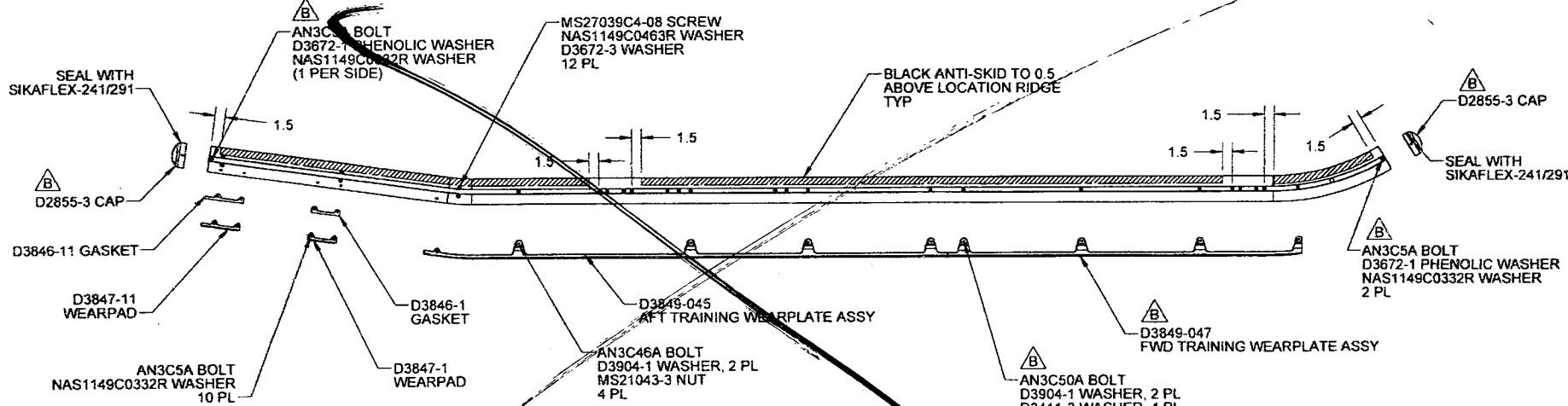
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE
(MAKE FROM D3905-13 SKIDTUBE)

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10/10/15 MHD

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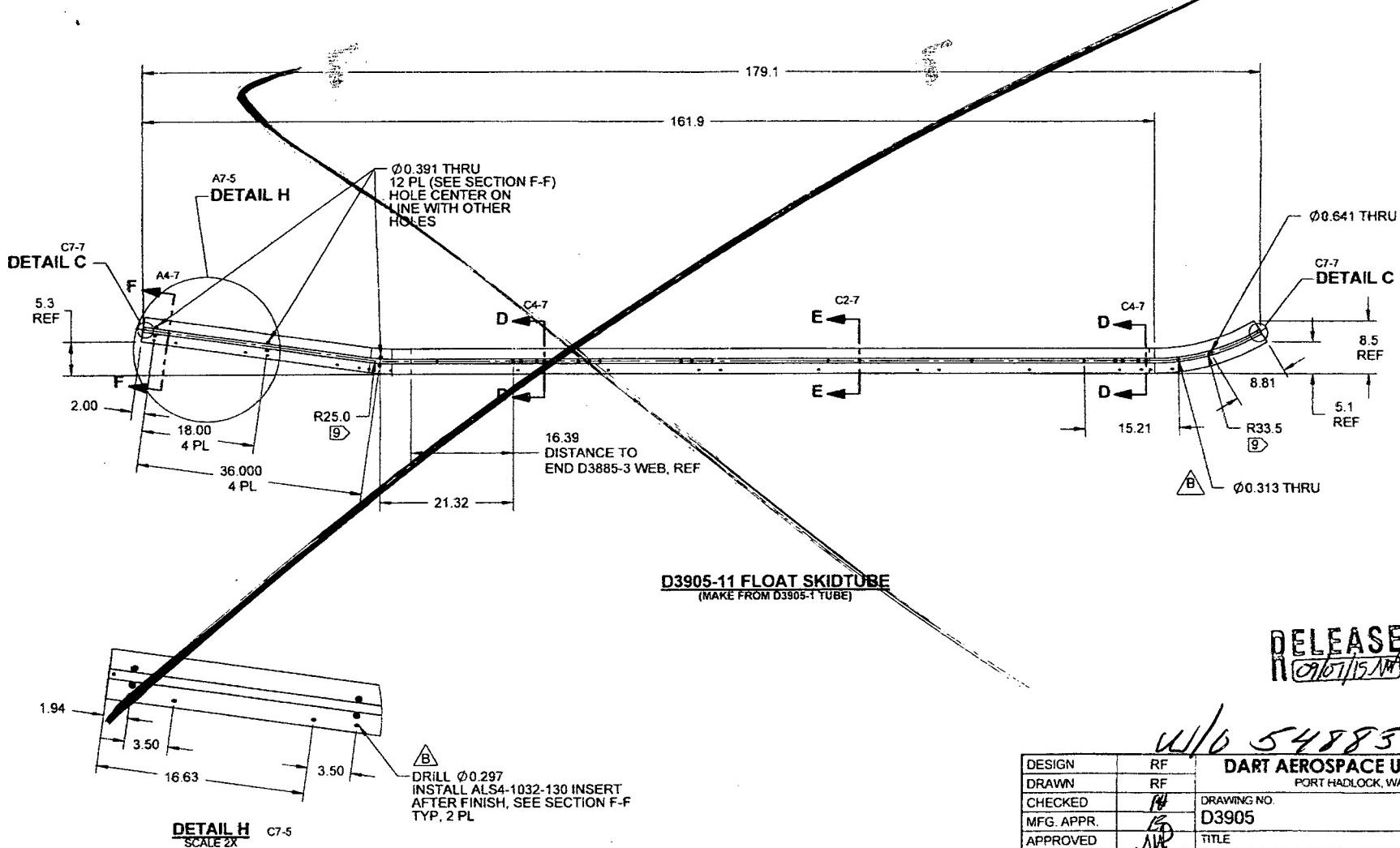
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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8 7 6 5 4 3 2 1



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DE APPR.	[initial]	DATE 09.06.30

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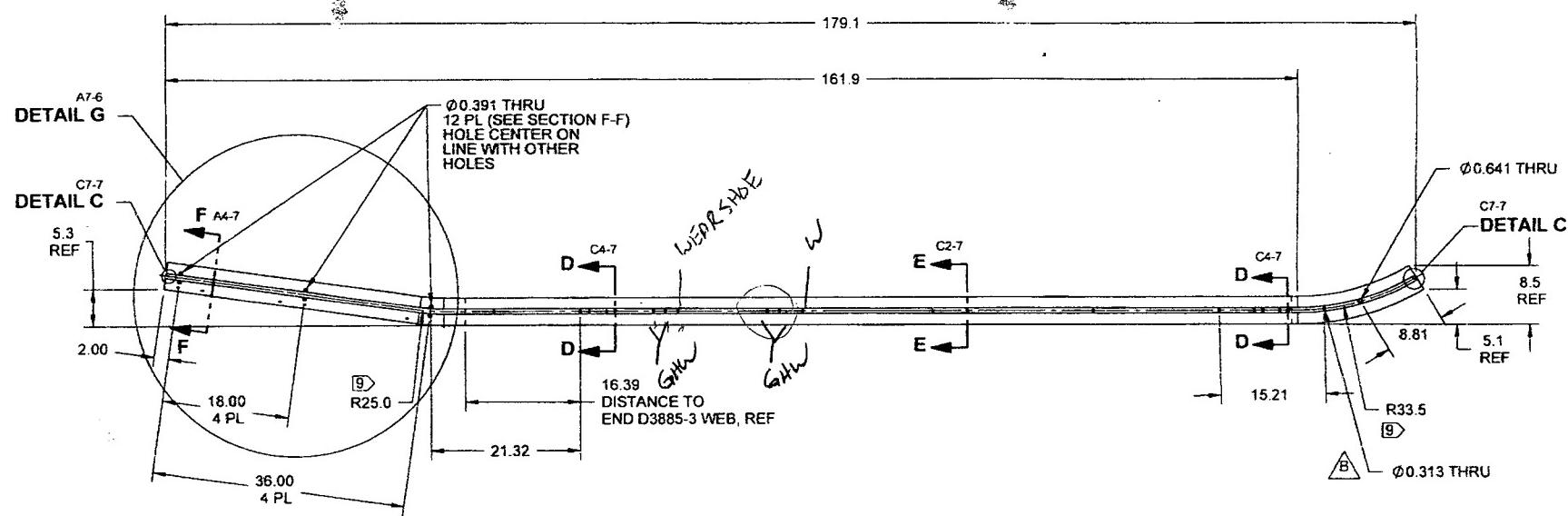
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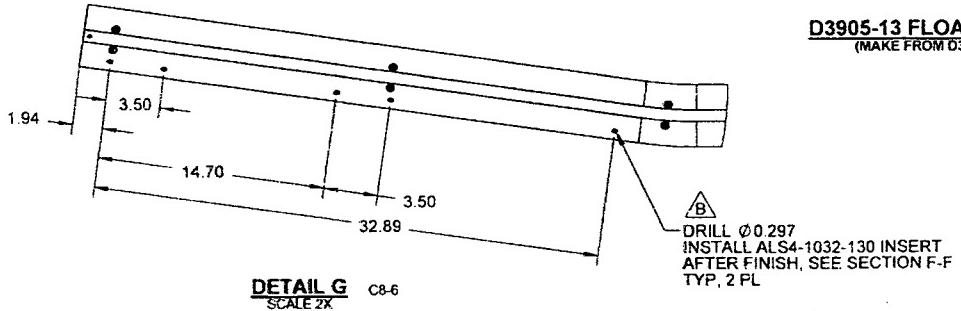
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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D3905-13 FLOAT SKIDTUBE
(MAKE FROM D3905-1 TUBE)



DETAIL G
SCALE 2X

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8 7 6 5 4 3 2 1

D

C

B

A

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

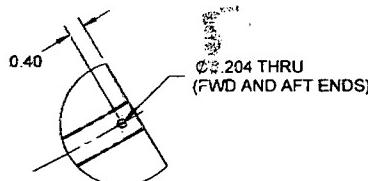
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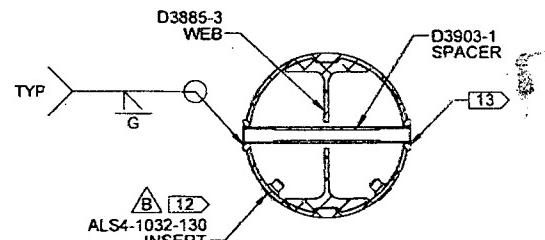
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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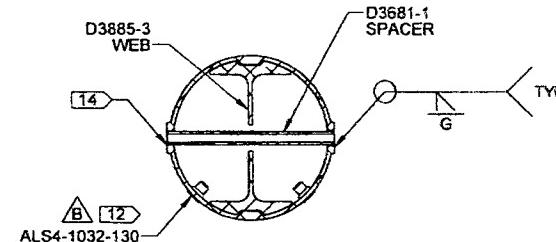


DETAIL C
SCALE 4X
C1-5
C8-5
C8-6
C1-6

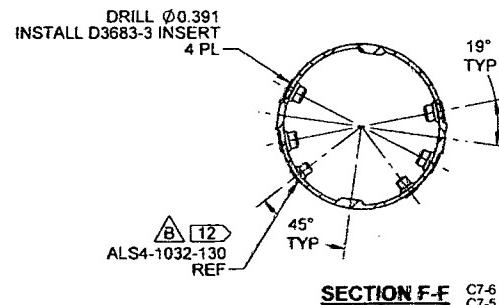


SECTION D-D
SCALE 4X
C5-5
C2-5
C5-6
C2-6

(FOR 12 x Ø 0.375 HOLES
PER SKIDTUBE)



SECTION E-E
SCALE 4X
C4-5
C4-6
(FOR 8 x Ø 0.313 HOLES
PER SKIDTUBE) **B**



SECTION F-F
SCALE 4X
C7-6
C7-5

NOTES:

- 13) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø 0.375 HOLES ONLY:
 i) CHAMFER HOLES Ø 0.475 x 45° (BOTH SIDES)
 ii) INSERT D3903-1 SPACER
 iii) WELD INTO PLACE AND GRIND FLUSH
 iv) C'BORE TO 0.313 x 0.75 DEEP
 v) DEBURR HOLES
- B** 14) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø 0.313 HOLES ONLY:
 vi) CHAMFER HOLES Ø 0.354 x 45° OR 0.050 DEEP x 45° (BOTH SIDES)
 vii) INSERT D3681-1 SPACER
 viii) WELD INTO PLACE AND GRIND FLUSH
 ix) DEBURR HOLES

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APPROVED	<i>N/A</i>	SHEET 7 OF 8
DE APPR.	<i>N/A</i>	TITLE <i>A119 FLOAT SKIDTUBE ASSY</i>
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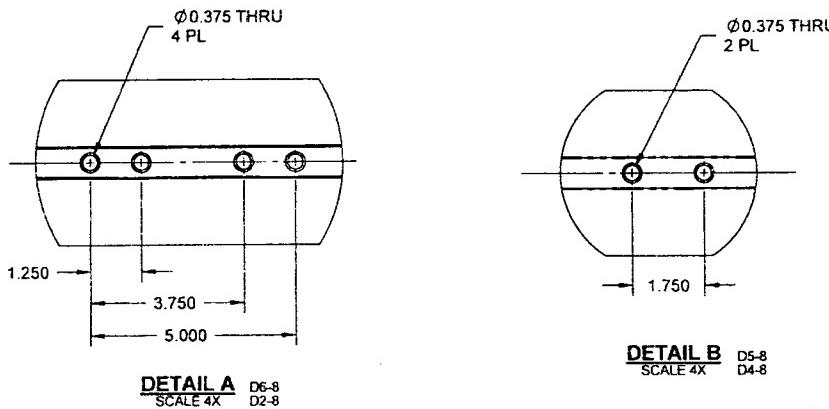
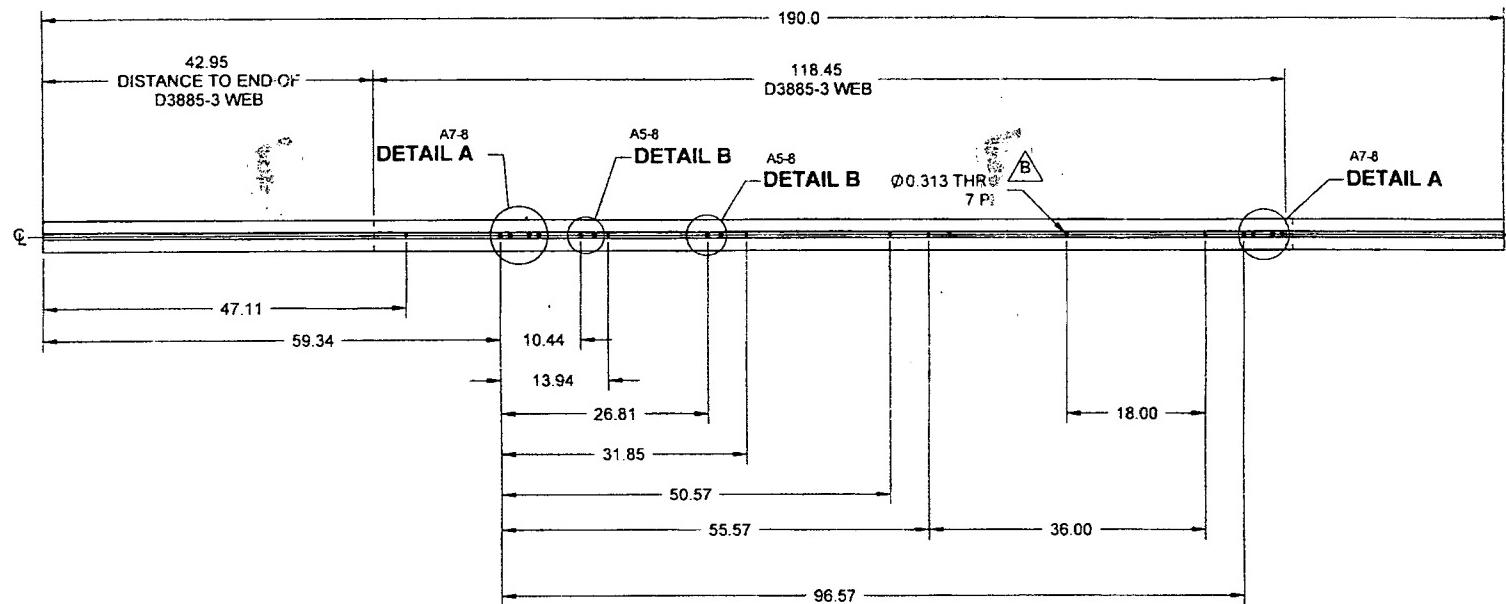
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8 7 6 5 4 3 2 1

C

B

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W/O:		WORK ORDER CHANGES					
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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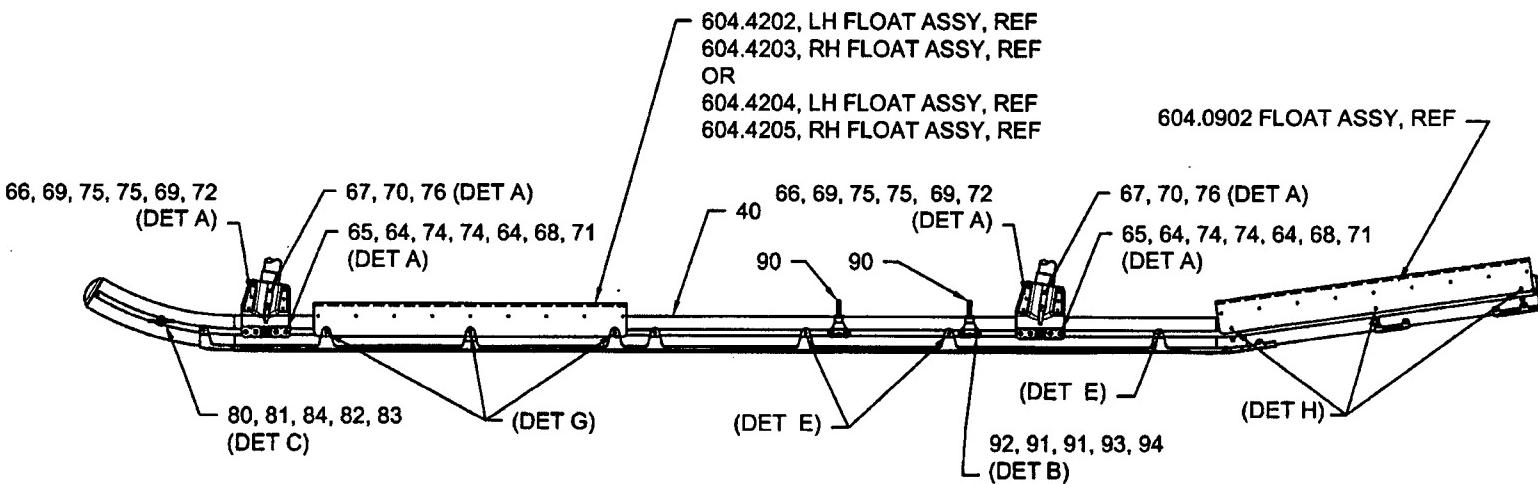
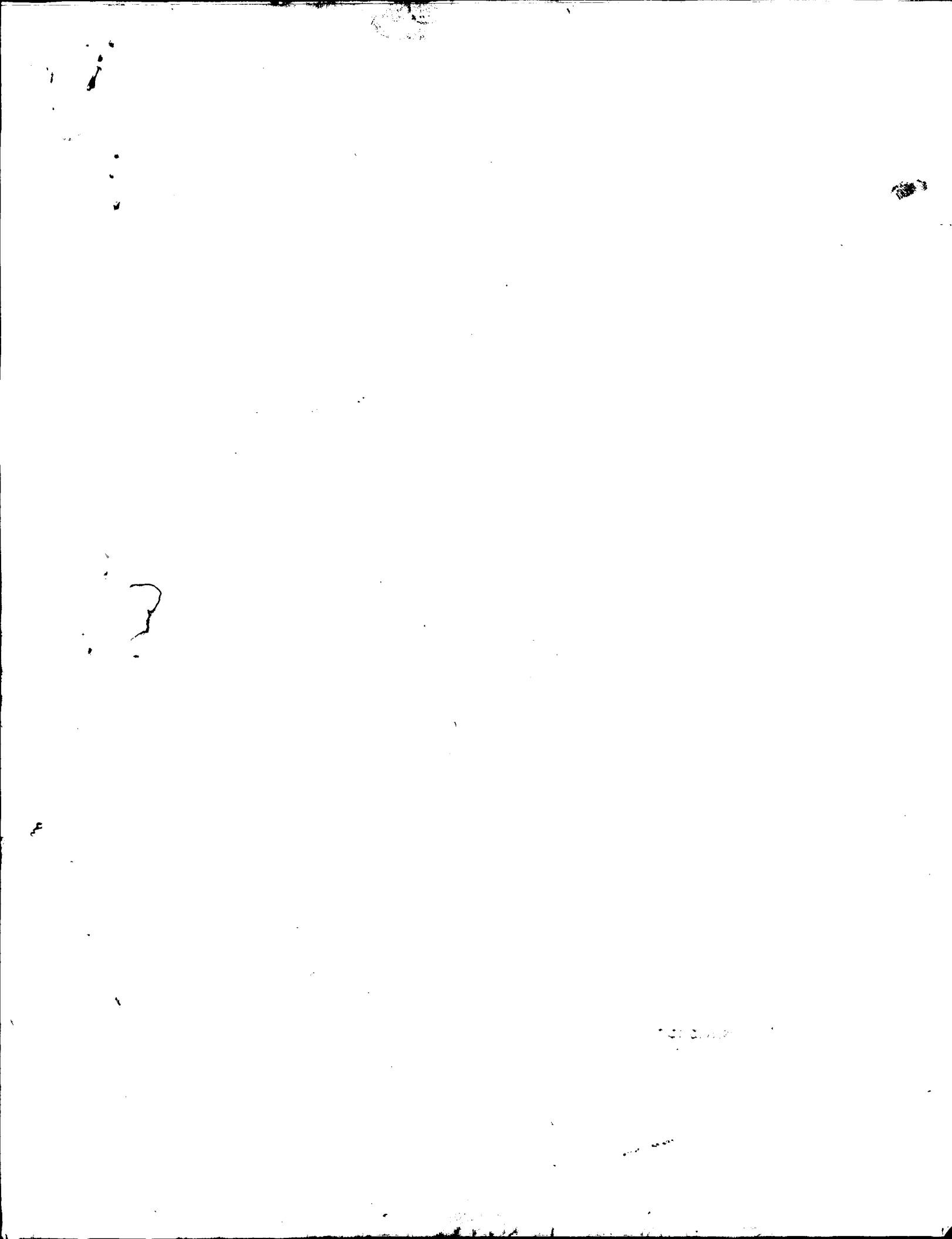


FIGURE 7 - D119-646-213 FLOAT SKIDTUBE INSTALLATION WITH TRAINING WEARPLATES, LH (SHOWN)
D119-646-214 FLOAT SKIDTUBE INSTALLATION WITH TRAINING WEARPLATES, RH (OPPOSITE)

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Revision: **B**
Date: 09.06.29



NO. .217

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 52996
Part number: D119-646-243
Description: 11" skid tube
Welding Process: Tig Mig []
Base material: Aluminum
Current: AC[✓] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[✓] fail[]
Penetration: pass[✓] fail[]

UNACCEPTABLE

Cracks: pass[✓] fail[]
Undercut: pass[✓] fail[]
Pin holes: pass[✓] fail[]
Overlap (cold lap) pass[✓] fail[]
Porosity (surface): pass[✓] fail[]
Coloration: pass[✓] fail[]

Qualifier Barclay Elliott Date of Test Coupon 09.11.16
Welder Barclay Elliott Date of Test Coupon 09.11.16

The above named individual is qualified in accordance with AWS D17.1.2001 to weld